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IS 5476 (1986): Glossary of term relating to jute [TXD 3: Jute and Jute Products]



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Indian Standard

GLOSSARY OF TERMS RELATING TO JUTE

(First Revision)

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

GLOSSARY OF TERMS RELATING TO JUTE

(First Revision)

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Indian Standard

GLOSSARY OF TERMS RELATING TO JUTE (*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 30 January 1986, after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.

0.2 This standard was first issued in 1969. It has been revised with a view to make the definitions of various terms included in the standard up-to-date and also with a view to eliminate ambiguity or confusion arising from local interpretations and hence to establish a generally recognised usage. The definitions of terms have been modified to be in line with the standards in force.

0.3 In the preparation of this standard, considerable assistance has been derived from the work done by the Indian Jute Industries' Research Association, Calcutta.

1. SCOPE

1.1 This standard prescribes definitions of terms commonly used in jute industry and trade.

2. DEFINITIONS

A

Assortment of Fibres — Denotes selection, sorting and classification of raw jute fibre according to grade (*see* Grading of Jute).

A-Twill Cloth — A double warp, 2/1 twill weave sacking jute cloth having 102 ends/dm and 35 picks/dm and weighing 760 g/m².

A-Twill Bag — Bags made from A-twill cloth, the standard dimensions being 112 × 67.5 cm and weighing 1 190 g (*see also* IS: 1943-1964*).

*Specification for A-twill jute bags (*revised*).

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Australian Bran Bag (or A-Bran Bag) — A selvaged hessian bag with 47 ends/dm and 47 picks/dm normally measuring 124.5×76 cm and weighing approximately 565 g.

Australian Cornsack Cloth — See 'Cornsack Cloth'.

Australian Cornsack — A double warp hemmed twill sacking bag (without stripes) measuring about 104×58.5 cm (normally with 102 ends/dm and 35 picks/dm), weighing approximately 1 020 g (see also IS : 2875-1964*) (see also Cornsack Bag).

Australian Woolpack — See 'New Jute Woolpack'.

B

Bagging — A single or double-warp, heavy jute cloth usually in plain weave.

Bale (Gunny) — A rectangular or square shaped compressed rigid package containing jute fabrics or bags wrapped with bale covering with outer layer stitched and bound by metal hoops.

Bale (Fibre Kutcha) — A package of raw jute consisting of several heads (*MORAHS*) usually weighing 150 or 130 kg. It is compressed in a hand-operated press and is bound with jute ropes.

Bale (Fibre Pucca) — A package of raw jute consisting of several heads (*MORAHS*) hydraulically pressed and bound with jute ropes. Its nominal net mass is 180 kg.

Baling Hoops — Hot rolled steel strips used to fasten or tie bales.

Bar — A colour bar or a band running across the width of cloth, different in appearance or texture or both from the general body of the cloth due to presence of more number of picks or to the use of different types of weft yarn.

Batch — Composition of jute mix of different grades and varieties of raw jute for manufacture of particular jute products.

Batching — The process of selection and mixing of jute fibres into batches and treating the same with oil-in-water emulsion and piling for a certain time, if necessary, for softening the fibre prior to further processing.

Bates Valve — A one-way valve fixed to a bag to facilitate nozzle filling which eliminates sewing after filling.

*Specification for jute corn sacks.

B-Bottom — Indicates a quality of jute (*see* Grading of Jute).

Beaming — The operation of warp preparation in which warp ends drawn either from a warping creel or from a set of beams prepared beforehand are evenly spaced in sheet form and wound on a beam. Sometimes beaming and dressing are combined into one operation.

Bias — A fabric condition in which warp and weft yarns do not keep at right angles to each other.

Bias Bag — Bags fabricated by cutting across the bias tubing according to required size and folding and stitching along with one of the open ends.

Bias Tubing — Continuous length of cloth (usually hessian) in a cut or roll suitably stitched lengthwise selvedge to selvedge in a biased way to form a bias tubing. Here, the weft yarns do not remain at right angles but are kept at an angle of about 30 to 45° to the length of the tubing.

BIMLI — Fibre obtained from the bast of *Hibiscus sabdariffa* (Rose-lle). The fibre reeds are associated with underground roots since the plants, exclusively grown in Andhra Pradesh, are generally uprooted during harvesting. Chemically, it is different from jute in its low lignin content and is in general inferior and coarser than jute. It is a substitute for jute.

Bitumen Felt — A hessian cloth saturated in molten bitumen and treated by passage through bituminous coating material and finally given a superficial application of mineral powder like tale, slate and mica. It is used for roofing purposes.

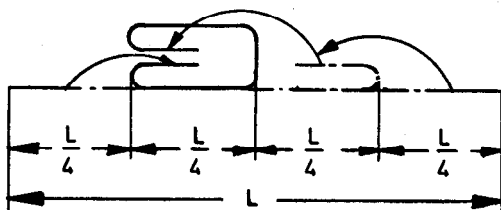
Bituminous Surfacing — A sacking or hessian cloth impregnated with low melting point bitumen and coated on both sides with a high melting point bitumen. It is used as a waterproof membrane for canal lining and surfacing air strips and roads.

Bleaching — The process of making natural jute fibre or fabric white by chemical means with or without any scouring treatment or removal of natural colouring or extraneous substance.

Bolt — A lapped and folded cloth with a continuous length.

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Book-Fold Bolt — A single cut which is lapped and folded into a book-fold illustrated by the heavy line in the figure (*see also* IS : 2873-1969*).



L = Length of lap.

BOOK-FOLD BOLT

Bottom — Indicates a quality of raw jute (*see* Grading of Jute).

Bow — The greatest distance parallel to the selvages between a weft yarn and a straight line drawn between the points at which this yarn meets the selvages. The straight line connecting the selvages is perpendicular to both.

Bran Bag — *See* 'Australian Bran Bag'.

Branding — Marking on fabrics, sacks or bags with inks, dyes or pigment colours to indicate trade-mark, content, weight, etc.

Brattice Cloth — Hessian fabric which after rot and fire-proofing is used in mines as windscreens and for ventilation purposes.

Breaking Load — The maximum load which a specimen can bear at the point of break or rupture. It is expressed in gram force (gf) or kilogram force (kgf) or Newtons (N).

Bright Hessian — A special hessian with high brightness index and cleanliness and of good texture.

Brightening — Partial improvement in colour by suitable chemical treatment of the raw jute or jute product.

Brusselettee — A jute floor covering made in different weights from jute yarns in plain weave. It is made in different designs, such as prints, stripes, checks and their combinations in different colours. Two beams are generally used; one for the looping yarn and the other for ground yarn.

*Specification for packaging of jute products in bales (*first revision*).

B-Twill Bag — A bag made from B-twill cloth, the standard dimensions and mass being as shown below (*see also* IS : 2566-1984*):

i) Size	100 kg	93 kg	75 kg	50 kg
ii) Dimensions	122 × 67.5 cm	112 × 67.5 cm	106.5 × 61 cm	94 × 57 cm
iii) Mass				
a) Overhead stitched	1 110 g	1 020 g	880 g	730 g
b) Herakle stitched	1 115 g	1 025 g	885 g	735 g

B-Twill Cloth — A double warp 2/1 twill weave sacking jute cloth with 76 ends/dm and 31 picks/dm and weighing 643 g/m² (*see also* IS : 3667-1984†).

Burlap — A term applied in the American trade to jute hessian.

C

Caddis — Short jute fibre droppings accumulated under different machines during processing.

Calendering — A finishing process in which the cloth which may have been dampened is run under pressure between two or more alternate steel and compressed paper covered cylinders (bowls). One of the steel cylinders is usually heated. This process flattens the threads and when a heated cylinder is used, it gives the surface a sheen or glossy finish. When the process has been done once, the cloth is described as calendered or single-calendered and if done twice, the cloth is described as double-calendered. The machine in which the process takes place is known as 'calender'.

Camouflage Garnishing Strips — A variety of narrow hessian strips or tapes with patent selvedge used in Defence Departments (*see also* Scrim Garnishing).

Camouflage Scrim Hessian — A very open weave light hessian cloth, grey or dyed (*see also* Scrim Garnishing).

Canvas (Jute) — A plain weave cloth made wholly of jute with double warp and single weft interwoven, weighing not less than 407 g/m². The number of warp threads (ends/dm) shall be more than 118 and the number of weft threads (picks/dm) shall not be less than 55.

Carding — A process of opening out and separating the entangled or matted mass of fibres.

Carpet — *See* 'Matting' and 'Needled Felt'.

*Specification for B-twill jute bags for packing foodgrains (*second revision*).

†Specification for B-twill jute cloth (*first revision*).

Carpet Backing (Primary) — The base fabric on which yarns are inserted and anchored to make a carpet.

Carpet Backing (Secondary) — Fabric bonded on the backside of the carpet forming an underlay.

Cement Bag — Bags made from jute fabric, usually measuring 71×48 cm and weighing 530 g. It has a valve at the side. It is made from double warp plain weave sacking fabric having 68 ends/dm and 39 picks/dm and weighing approximately 685 g/m^2 (see IS : 2580-1982*).

Centre Root (BOOK CHAL) (Fibre) — See under 'Fibre Characteristics'.

CHAT — An Indian name for all types of cloth made of jute.

Chesting — A finishing process in which the cloth after passing between all the bowls, usually, five, of a calender from bottom to top is wound upon itself on either of the two upper bowls and later stripped therefrom. This process reduces the size of the interstices between threads. When the process has been done once, the cloth is described as chested or single-chested and if done twice, the cloth is described as double-chested.

Clock Length — Length of material fed into the breaker card for one complete revolution of the clock pointer.

Cocoasack — Double-warp 2/1 twill weave sacking bags measuring usually 122×73.5 cm (normally with 102 ends/dm and 81 picks/dm) weighing approximately 1 360 g, and with 5 cm wide green or blue stripes. It is used for packing cocoabeans.

Coffee Twill Bag — A double-warp hemmed twill sacking bag measuring usually 101.5×71 cm (with varying ends/dm and picks/dm ranging from 89 to 102 and 31 to 35 respectively), weighing approximately between 1 135 and 1 600 g, used for packing coffee.

Colour (Fibre) — See under 'Fibre Characteristics'.

Contract Net Weight (Bale)

- a) *Cloth* — The weight as obtained from the specified length per bale, nominal width and weight per square metre of cloth. It is calculated as follows:

$$\text{Contract net weight of a bale (kg)} = \frac{\text{Nominal width (cm)} \times \text{specified length (m)} \times \text{weight (g/m}^2 \text{)}}{10^5}$$

*Specification for jute sacking bags for packing cement (second revision).

b) *Bags* — The weight as obtained by multiplying the nominal weight of a bag and specified number of bags per bale.

Contract Regain — The percentage moisture regain on the basis of which the corrected net weight is calculated for trading purposes.

Cop — A form of cylindrical package of weft yarn tapered at one end used in the shuttle for weaving jute fabric.

Cornsack Cloth — A double warp, 2/1 twill weave sacking jute cloth having 102 ends/dm and 35 picks/dm and weighing 78 g/m² (*see* IS : 3750-1968*).

Cornsack Bag — Bags made from Australian cornsack cloth normally measuring 104 × 58.5 cm (*see* IS : 2875-1964†).

Corrected Net Weight (Bale) — The weight obtained by adjusting the actual net weight on the basis of actual regain to the contract regain. It is calculated as follows:

$$\text{Corrected net weight of a bale (kg)} = \frac{\text{Net weight (kg)} \times (100 + \text{contract regain percent})}{100 + \text{average moisture regain, percent}}$$

Cotton Bagging — Bagging cloth used for wrapping cotton bales (*see also* IS : 4436-1967‡).

Cottonsack — A hemmed hessian bag measuring about 216 × 114 cm (normally with 38 ends/dm and 39 picks/dm), weighing approximately 1 360 g. The bag is usually without stripes and tar sewn.

Count — *See* 'Grist'.

Crisped — A term used in describing an aspect of make-up of jute fabric; it describes a jute fabric folded lengthwise at the middle from selvedge to selvedge.

Crop-End (Fibre) — *See* under 'Fibre Characteristics'.

Cropping — A finishing process in which the short protruding fibres on the surface of the cloth are removed by rotating sharpened spiral blades.

a) *One Side Single-Cropped* — When one side of the cloth is cropped once.

*Specification for jute corn sack cloth.

†Specification for jute corn sacks.

‡Specification for jute bagging for wrapping cotton bales.

- b) *One Side Double-Cropped* — When one side of the cloth is cropped twice.
- c) *Both Side Single-Cropped* — When both sides of the cloth are cropped once.
- d) *Both Side Double-Cropped* — When both sides of the cloth are cropped twice.

Cuban Sugar Bag (Cubans) — Bags made from double-warp 2/1 twill weave sacking cloth measuring about 122×73.5 cm weighing approximately 1 135 g; the cloth normally having 102 ends/dm and 31 picks/dm.

Cut Cloth — A continuous length of cloth.

	<i>Hessian</i>	<i>Sacking</i>
Cut (or full cut)	82 m or more	73 m or more
Medium cut	37 m or more but less than 82 m	37 m or more but less than 73 m
Short piece	18 m or more but less than 37 m	14 m or more but less than 37 m

Cuttings — Hard and barky portion of jute strand cut off from the root end or crop end of the raw jute strands.

D

Daisee Jute — *See* 'Jute'.

Damping — The process of moistening of jute fabric to prepare it for calendering or chesting.

Dead Weight Volume (Bale) — The volume calculated from the contract weight of a bale on the basis of 1'393 5 cubic metres to a tonne or 50 cubic feet to a ton.

Density (Fibre) — *See* under 'Fibre Characteristics'.

Dollop — A specified weight of jute to be spread on the feed cloth of a breaker card or a hackling machine, as the case may be, in a given time usually indicated by one complete revolution of a clock pointer of a machine.

Double Hessian Bag — A bag having two layers of cloth on each face.

Double Layer Bag — *See* 'Double Hessian Bag'.

Double-Warp (DW) Cloth — A jute cloth in which warp yarns are woven in pairs.

Draft — Ratio of speed between delivery roller and feed roller.

Drawing — The process of blending (or doubling) and parallelization of fibres in slivers along with drafting.

Dressing — A process of treating warp yarns with size prior to weaving.

Droppings — Caddies, short fibres and dust particles which come out of jute fibres during the process of manufacture.

Dry Sewn — Sewing done with plain yarn or twine.

DW (Double-Warp) Flour Bag — See 'Flour Bag'.

DW (Double-Warp) Heavy Cee Bag — See 'Heavy Cee Bag'.

DW (Double-Warp) Raisin Bag — See 'Raisin Bag'.

DW (Double-Warp) Salt Bag — See 'Salt Bag'.

E

Ears — See 'Lugs'.

E-Bag — A double-warp hemmed plain weave sacking bag measuring about 101.5×71 cm (normally with 42.5 ends/dm and 31 picks/dm), weighing approximately 759 g. The bag is usually without stripes.

Effective Reed Length (Fibre) — See under 'Fibre Characteristics'.

Egyptian Grainsack — A double-warp hemmed twill sacking bag measuring about 152.5×76 cm (normally with 76 ends/dm and 31 picks/dm), weighing approximately 2 270 g or 1 475 g with 5 cm wide magenta stripes and tar sewn.

Egyptian Sugar Bag — A double-warp hemmed twill sacking bag measuring about 122×71 cm (normally with 76 ends/dm and 31 picks/dm), weighing approximately 1 135 g with 5 cm wide blue or magenta stripes and tar sewn.

Ends — The warp or longitudinally placed yarns or threads in a fabric running parallel to the selvages.

English Bran — A hemmed hessian bag measuring 124.5×68.5 cm weighing approximately 510 g, without stripes.

E-Nitrate — See 'Nitrate DW Bag'.

F

Felt — See 'Needled Felt'.

Fibre Boards — See 'Jute Fibre Board'.

Fibre Characteristics — The following are the principal jute fibre characteristics:

- 1) *Centre Root (BOOK CHAL)* — The hard barky region in the middle part of the reed which requires additional softening treatment.

- 2) *Colour* — The property of a fibre which distinguishes its appearance such as redness, yellowness, greyiness, etc.
- 3) *Crop End* — The hard gummy (sometimes barkey) fibre at the top end of the reed.
- 4) *Croppy Fibre* — Fibre with apical ends rough and hard (but not barky).
- 5) *Dazed Fibre* — Fibre which is weak and dull in appearance.
- 6) *Density* — Mass per unit volume of the fibre including air-spaces. Higher density (heavy body) is a characteristic of better quality of fibre.
- 7) *Effective Reed Length* — The length of the reed after defective basal and apical ends have been removed.
- 8) *Fibre Fineness* — A measure of diameter or weight per unit length or both. The finer the fibre, the better is the spinning quality.
- 9) *FULPAT* — A term used for weak, gummy and immature jute fibre.
- 10) *Gummy Fibre* — Closely adhering fibre strands not easily separable.
- 11) *HUNKA* — The very hard barky fibre running continuously from the basal end to almost the apex of the reed.
- 12) *Leaf* — Spots of dry leaf which may appear in the strand.
- 13) *Lustre* — It depends on the display of light reflected from the fibre exposed to normal light. Higher lustre in jute is generally a characteristic of better quality fibre.
- 14) *Meshiness* — The intertwining of fibre strands forming loops, genetically inherent in the species from which fibre is obtained.
- 15) *Moss* — Presence of dead adventitious roots at the lower or middle part of the reed.
- 16) *Over-Retted Fibre* — Fibre which has lost its strength and brightness.
- 17) *Pliability* — The property which determines how easily the fibre can be bent or twisted.
- 18) *Reed* — The fibre system from the stem of one individual jute plant (see also Porter).
- 19) *Reed Length* — The entire length of the reed including the base and apex.
- 20) *Reed Tapering* — The rate of thinning of the reed from the base to the apex.

- 21) *Reed Thickness* — The average thickness of the reed.
- 22) *Root* — The hard barky region at the basal end of a reed which requires additional softening treatment. Also known as 'Cuttings'.
- 23) *Runner* — The hard barky fibres running from the lower end to the middle region, more or less continuously.
- 24) *Speck* — The bark with a knotty core in the body of the strand which breaks the continuity of fibre.
- 25) *Sticks* — Presence of small pieces of wood of jute plant over the body of the reed.
- 26) *Tensile Strength* — The longitudinal stress at which a fibre specimen of a specified length ruptures. It is usually represented in gram force per tex.

Fibre Fineness — See under 'Fibre Characteristics'.

Fibre Strand — The bast fibre in the jute plant, situated between the outer bark and the central woody core and running the whole length of the stem as a lace-work sheath usually several layers thick.

Fiji Bag — A hemmed hessian bag measuring about 91.5 × 56 cm (normally with 47 ends/dm and 59 picks/dm), weighing approximately 455 g, without stripes and dry sewn.

Fine Hessian — A term used to describe hessian generally made from fine counts of jute yarn.

Finishing — The various operations that a jute fabric undergoes after weaving and prior to packing.

Fleece — Carded jute fibre mat before being condensed into sliver form.

Flour Bag — Bags made from DW flour jute cloth; the standard dimension being 142 × 71 cm and weighing approx 1135 g (see also IS : 3984-1967*).

Flour Bag Cloth — A double warp plain weave sacking jute cloth having 68 ends/dm and 31 picks/dm and weighing 539 g/m² (see IS : 3966-1967†).

G

Garnishing Scrim — Open weave or mesh hessian, grey or dyed, in the form of strips used for camouflage purposes.

Gaw — A gap in the jute cloth caused by missing weft.

Grading of Jute — Sorting of jute fibres into various grades according to the fibre characteristics such as W₁, W₂, etc, for white raw jute and TD₁,

*Specification for DW-flour bags.

†Specification for DW-flour jute cloth.

TD₂, etc, for *TOSSA* daisee raw jute (*see* IS : 271-1975*).

Grist — The linear density of jute yarn, twine, etc, expressed as weight/spindle (14 400 yards) in pounds. Also known as 'Count'.

Gummy Matter — The pectin type of gummy matter present in jute fibres due to insufficient retting.

Gunny — A general term applied to manufactured jute goods, specially sacking.

H

HABI JABI — Tangled and ravelled jute of any description free of *HUNKA* and sticks.

Hank — Jute yarn or twine in reeled form usually of 254 cm (or 90 in) circumference and 274 m (or 300 yd) length.

Hd — Short form of 'Hemmed'.

Head — Bundle of jute in a bale of raw jute usually weighing from 2.25 to 4.50 kg. Each head is given a twist and folded prior to packing in the bale.

Heavy Cee — A double warp plain weave sacking jute cloth having 68 ends/dm and 35 picks/dm and weighing 673 g/m² (*see* IS : 3751-1966†).

Heavy Cee Bag — Bags made from heavy cee cloth measuring normally 101.5 × 71 cm and weighing 1 020 g (*see* IS : 2874-1964‡).

Heavy Goods — A term by which sacking goods are denoted (*see* Sacking).

Hemmed Bag — A bag with raw edges of the cloth at the mouth folded and stitched.

Hessian — A single-warp plain weave jute fabric manufactured in varying weights and widths, weighing up to 500 g/m² [*see also* IS : 2818 (Part 1)-1971§].

Hessian Bag — Bag made from hessian.

Hop Cloth — A very coarse double-warp plain weave fabric used for making bags.

HUNKA (Fibre) — *See* under 'Fibre Characteristics'.

*Grading of white, *TOSSA* and *DAISSE* uncut Indian jute (*second revision*).

†Specification for heavy cee cloth.

‡Specification for heavy cee jute bags.

§Specification for Indian hessian: Part 1 General (*first revision*).

J

JANGLI — An inferior variety of jute coming mainly from some Bihar districts.

Joined Bag — A bag fabricated out of two pieces of jute cloth.

Jute — A multicellular fibre obtained from the bast of various species of *Corchorus*, of which the round pod jute (*Corchorus capsularis* or white jute) and the long pod jute (*Corchorus olitorius* or *TOSSA* or *DAISEE* jute) are the most important. The fibre strands are long, usually varying from 1.5 to 3.5 m in length.

Jute Blanket — A type of blanket made out of woollenized jute or with jute mixed with low grade wool or cotton.

Jute Fibre Boards — Boards made by impregnating jute fibre with adhesives and other chemicals and consolidating the fibres under heat and pressure. These are used as insulation boards, fibre board drums, packing materials, etc.

Jute Matting — See 'Matting'.

Jute Mesh — An open weave jute cloth used for soil conservation and in lighter weights for the manufacture of strengthened paper and underfelt (see Scrim).

Jute Nettings — Nets manufactured with meshes of various sizes and provided with tying lines used for camouflage purposes.

Jute Rugs — Jute fabrics of various sizes sometimes cut, printed, hemmed and fringed for use as floor coverings.

Jute Stick — Woody centre stem of a jute plant.

Jute Stick Boards — Boards made from jute stick particles. These are used for insulation partitioning, packing cases, etc.

Jute Twine — A plied yarn made by twisting together two or more strands of yarn.

Jutlac — Laminated sheet made of jute and shellac combination capable of being made into drums, boxes and similar articles.

K

K-Bag — A double-warp hemmed plain weave sacking bag measuring about 101.5 × 71 cm (normally with 51 ends/dm, 31 picks/dm), weighing approximately 850 g, plain (without stripes), and dry sewn.

Kidderminster — Jute carpet with jacquard figures made in double cloth, with 120 to 160 ends/dm and 80 to 120 picks/dm.

L

Laminates — Jute fabric, usually hessian and DW tarpaulin, laminated with kraft paper or plastic sheets.

Lapped — A term used in describing an aspect of make-up of jute fabric; it describes a jute fabric continuously folded backwards and forwards in predetermined lengths.

Lead — The slightly faster surface speed of a roller or a set of sliding bars than that of another roller just behind it is called lead and is usually expressed as a percentage of the speed of the slower roller.

Light Cee Bag — A double-warp hemmed plain weave sacking bag measuring about 101.5×71 cm (normally with 68 ends/dm and 31 picks/dm) and weighing approximately 910 g, striped or plain, and dry sewn.

Liverpool Twill (L-Twill) Cloth — A double warp twill weave sacking cloth having 102 ends/cm and 31 picks/dm and weighing approx 716 g/m^2 (see IS : 3668-1966*).

L-Twill Bag — Bags made from L-twill cloth normally measuring 112×67.5 cm and weighing approximately 1135 g (see IS : 3794-1966†).

Long End — A term used to refer to the extended bottom layer of cloth of a lapped cut which is turned and placed on top of the lap before folding.

Lugs (Ears) — Strips of cloth stitched or tied to the corners of bags of packages generally in a loop form to facilitate easy handling. Also may be made by stitching the bottom corners of the bags diagonally.

Lustre (Fibre) — See under 'Fibre Characteristics'.

M

Mangling — A finishing process in which the cloth that has been calendered is rolled on a steel pin and rotated backwards and forwards under pressure, a number of times between two steel bowls. Mangling closes the interstices between threads more effectively than chesting. When the process has been done once, the cloth is described as mangled and if done twice, the cloth is described as double-mangled. The machine in which the process takes place is known as 'Mangle'.

Matting — Jute floor covering fabric woven in plain, striped, dobby or jacquard designs.

Meshiness (Fibre) — See under 'Fibre Characteristics'.

*Specification for liverpool twill (L-twill) cloth.

†Specification for liverpool twill (L-twill) bags.

MESTA — This fibre which is a substitute of jute is obtained from the bast of *Hibiscus cannabinus* (Kenaf). Chemically, it is different from jute in its low lignin content and is, in general, inferior and coarser than jute.

Middle — Indicates a quality of raw jute (*see* Grading of Jute).

Moisture Content — The mass of moisture in jute or jute goods expressed as a percentage of the total mass.

Example:

If 100 parts by mass of material contains 20 parts by mass of moisture, the moisture content is

$$\frac{100 \times 20}{100} = 20 \text{ percent}$$

Moisture Regain — The mass of moisture percent in jute or jute goods expressed as a percentage of the oven-dry mass

Example:

If 100 parts by mass of material contains 20 parts by mass of moisture, the regain is

$$\frac{100 \times 20}{80} = 25 \text{ percent}$$

MORAH — *See* 'Head'.

Moss — *See* under 'Fibre Characteristics'.

N

Needled Felt — A felt produced on a hessian or scrim base by pricking into it with needles on a lap or sheet or intertwined fibrous material usually obtained from jute caddis or shredded fibre waste. The felt may be needled on one or both sides of the fabric base, that is, can be either single-sided or double-sided. Sometimes needled felt is produced without a hessian or scrim base. It is used as padding material for automobile seats.

NEWAR — Heavy jute tape, usually 4 to 10 cm wide, woven in a narrow tape loom.

New Jute Woolpack — A double-warp hemmed twill sacking pack (without stripes) with attached top, measuring about $137 \times 69 \times 69$ cm (normally with 102 ends/dm and 35 picks/dm), weighing approximately 5 100 g.

New Zealand Cornsack — A hemmed twill sacking bag measuring about 117×58.5 cm (without stripes) normally with 102 ends/dm, and

35 picks/dm weighing approximately 1 145 g and dry sewn (*see also* IS : 2875-1964*).

New Zealand Woolpack — A double-warp hemmed twill sacking pack with 1.5 cm wide red or blue stripes measuring $137 \times 69 \times 69$ cm (normally with 102 ends/dm and 31 picks/dm), weighing approximately 5 445 g, and dry sewn (*see also* New Jute Woolpack).

Nitrate DW Bag — A double-warp hemmed plain weave sacking bag measuring approximately 84×41 cm (normally with 68 ends/dm and 31 picks/dm), weighing approximately 710 g either without stripes or with 1.3 cm coloured stripes.

O

Onion Pocket — A hemmed hessian bag measuring about 101.5×57 cm (normally with 38 ends/dm and 39 picks/dm), weighing approximately 340 g, with three blue stripes and tar sewn.

Ore Pocket — A double warp twill sacking selvaged bag measuring about 76×51 cm (normally with 102 ends/dm and 31 picks/dm), weighing approximately 680 g, without stripes and dry tar sewn.

Oslo Twill — A twill sacking cloth for bag making of about 108 cm width weighing about 534 g/m^2 (normally with 115 ends/dm and 39 picks/dm).

Oven-Dry Mass — The constant mass of a sample as obtained by drying at a temperature of 105 to 110°C .

P

Packing Allowance — The percentage allowance by which the volume of a bale may exceed the dead weight volume.

Pack Sheet — Jute fabric used as a protective covering for bales or trusses of jute fabrics or bags (*see also* IS : 2873-1969†).

Padding Double-Warp (or Padding DW) — A double-warp single weft fabric in plain weave used as cheap padding.

Paper-Lined Bag — Bag made of jute cloth lined with crepe or plain paper by means of bitumen or other adhesive.

Paper-Lined Hessian — Hessian laminated or reinforced with paper for any particular end use.

PAT — The local name of jute (*see* Jute).

*Specification for jute corn sacks.

†Specification for packaging of jute products in bales (*first revision*).

Picks (or Shots) — The weft or filling thread of a fabric.

Plain DWE — *See* 'E-Bag'.

Plain DW Flour Bag — *See* 'Flour Bag'.

Plain Weave — The type of weave in a cloth in which each warp thread or a pad of warp threads passes alternately over and under each weft thread.

Pliability (Fibre) — *See* under 'Fibre Characteristics'.

Polyethylene Extrusion Coated Fabric — Jute fabric extrusion coated with polyethylene to a thickness of 250 to 300 gauge used for packing industrial raw materials, hygroscopic fertilizers, etc.

Polyethylene-Lined Hessian — Hessian laminated or reinforced with polyethylene for any particular end use.

Porter

a) *Fabric* — Number of warp threads in a porter gauge length (1'85 inch) divided by number of threads drawn through each split in a finished fabric.

b) *Reed* — Number of splits per 1'85 inch.

Potato Bag — A double-warp hemmed plain weave sacking bag measuring about 91'5 × 81 cm (normally with 25'5 ends/dm and 31 picks/dm) and weighing approximately 454 g.

Pre-beaming — The primary operation of warp making in which ends withdrawn from warp creel, evenly spread in sheet form, are wound on a warper's beam.

Preparing — The operations, prior to spinning, from carding to the final drawing or roving stage.

R

Raisin Bag — A double-warp hemmed sacking bag measuring about 86 × 56 cm (normally with 25'5 ends/dm and 31 picks/dm), and weighing approximately 454 g.

Reed (Fibre) — *See* under 'Fibre Characteristics'.

Reed Length (Fibre) — *See* under 'Fibre Characteristics'.

Reed Tapering (Fibre) — *See* under 'Fibre Characteristics'.

Reed Thickness (Fibre) — *See* under 'Fibre Characteristics'.

Retting — The treatment on the harvested jute plant to make the best fibre strands more easily separable from the woody part (stick) of the

stem by immersing the plants in water which sets up certain chemical and biological changes to help the process.

Reversed Weave Fabric — A type of fabric where double weft and single warp is used, the warp is usually heavier than the weft.

Rolled — A term used for describing an aspect of make-up of the jute fabric; it describes a jute fabric made into a roll.

Rolls (Sliver) — Sliver wound into form of a roll at the delivery of a carding or a drawing machine by roll formers.

Roofing-Felt (Jute Based) — See 'Bitumen Felt'.

Root (Fibre) — See under 'Fibre Characteristics'.

Rotproofed Hessian — See 'Sand Bag'.

Rove — A continuous slightly twisted strand of fibres produced on a roving frame and from which yarn is spun.

Runner (Fibre) — See under 'Fibre Characteristics'.

S

Sacking — A range of heavy jute fabrics either in plain or twill manufactured by using coarse jute fibre in larger percentage than used for manufacturing tarpaulin hessian or such light fabrics (see *Tarpaulin and Hessian*).

Sacking Bag — A sack tailored from coarse jute fabric with either one side opening or a valve device fitted at one corner for filling, storing and conveying the goods.

Salt Bag — A double warp plain weave bag measuring 114.5×66 cm and weighing approximately 795 g. The sacking cloth has normally 51 ends/dm and 31 picks/dm.

Sand Bag — A bag made from hessian fabric measuring about 84×36 cm and weighing approximately 170 g (unproofed) and 190 g (proofed) (see IS : 9685-1981*).

Sand Bag Cloth — Hessian fabric having 38 ends/dm and 39 picks/dm and weighing approximately 245 g/m^2 [see IS : 2818 (Part 6)-1977†].

Scrim — A plain weave open mesh, light weight fabric weighing less than 214 g/m^2 . It is used in the manufacture of bags for large size light articles. It is fixed to tarred brown paper to make waterproof packing and used as tobacco shade cloth. The lighter varieties are also used for the manufacture of underfelt.

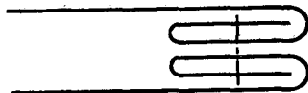
*Specification for sand bags, unproofed and cuprammonium proofed.

†Specification for Indian hessian: Part 6 245 g/m^2 at 16 percent contract regain.

Scrim Garnishing — It is a 50 mm or 75 mm hessian strip stitched on both the sides with sewing thread made from plain weave medium weight hessian fabric weighing not less than 305 g/m^2 . It is used for camouflaging purposes by Defence. The hessian is also dyed either in mild-bronze shade or grass green shade or light green shade or dark brown shade (see also Camouflage Garnishing Strips and Camouflage Scrim Hessian).

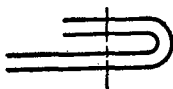
Seams — The various types of seams used in the fabrication of jute bags are given below:

- 1) *Counterlaid Seam* — A seam in jute bag formed by the raw edges of cloth turned outwards and sewn through for thicknesses of cloth. The bag is turned after sewing.



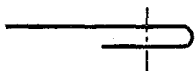
COUNTERLAID SEAM

- 2) *Flat Seam* — See 'Splay Seam'.
- 3) *Fold Over Seam* — A seam in jute bag formed by the two edges of cloth folded over and then sewn through for thicknesses of cloth. The bag is used without turning after sewing.



FOLD OVER SEAM

- 4) *Hemming* — A seam in jute bag formed by turning over the selvages of cloth once and sewn through two thicknesses of cloth while the raw edges may be turned twice and sewn (union stitch) through three or six thicknesses so formed.



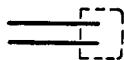
A (On Selvages)



B (On Raw Edges)

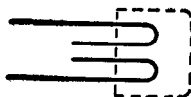
HEMMING

- 5) *Over-Edge Seam on Selvedges* — A seam in jute bag, formed with overhead or Herakles machines using heavy twine and sewn through two thicknesses of cloth with selvedges. The bag is used without turning after sewing.



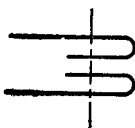
OVER-EDGE SEAM ON SELVEDGES

- 6) *Over-Edge Seam on Raw Edge* — A seam in jute bags formed by turning in the raw edges and sewn with overhead or Herakle machines using heavy twines through four thicknesses of cloth. The bag is used without turning.



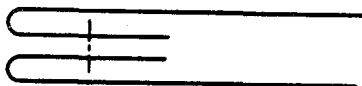
OVER-EDGE SEAM ON RAW EDGE

- 7) *Laid-In or 'M' Seam* — A seam in jute bag formed by the cloth edges turned in and the sewing (lock stitch or union stitch) is done through four thicknesses of cloth.



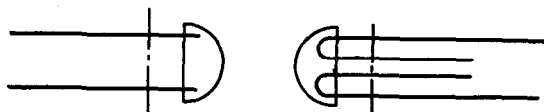
LAID-IN OR 'M' SEAM

- 8) *Overlap Seam* — See 'Fold-Over Seam'.
- 9) *Plain Seam* — A seam in jute bag formed by sewing (union stitch) through two thicknesses of cloth. The bag is turned after sewing.



PLAIN SEAM

- 10) *Safety Seam* — A seam with a second inner line of stitching (union or lock stitch) over and above the outer overhead or Herakle sewing.



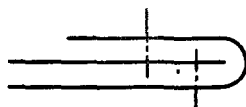
A (On Selvedges)

B (On Raw Edges)

SAFETY SEAM

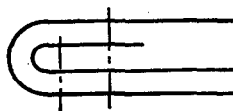
11) *Splay Seam*

- a) *On Selvedges* — The two selvedges are laid together, one edge projecting about 1.5 cm more than the other and then lock stitched through two folds of cloth. The protruding cloth is then turned over and stitched through two thicknesses of cloth. The bag is then turned after sewing. This type of seam is used in the heavy bags.



SPLAY SEAM ON SELVEDGES

- b) *On Edges* — Similar to splay seam on selvages but the cloth is sewn (lock stitch) at first through two or three folds and then through three folds. The bag is then turned after sewing.



SPLAY SEAM ON RAW EDGES

- 12) *Turn-Over Seam* — See 'Fold-Over Seam'.

Selvd — Short form of 'Selvedged'.

Selvedged Bag — A bag with selvedge forming the mouth of the bag.

Semibrite Hessian — Hessian made from fairly light coloured fibres or chemically treated fibres so as to improve its colour.

Short Piece — See under 'Cut (Cloth)'.

Shot — See 'Picks'.

Shooting — The number of weft threads per inch of the finished cloth.

NOTE — Shots per inch = picks per dm \times 0.254.

Sizing — See 'Dressing'.

Sliver — A condensed assemblage of processed fibres of uniform width without twist.

Slub — The short thick portion on a yarn.

Smash — A fabric defect where a number of warp threads have been ruptured through the shuttle being trapped in the shed.

Snarl — Short length of weft yarn in the cloth that has twisted on itself or bunched together.

Special Middle — Indicates a quality of raw jute (See Grading of Jute).

Special Top — Indicates the best quality of raw jute (See Grading of Jute).

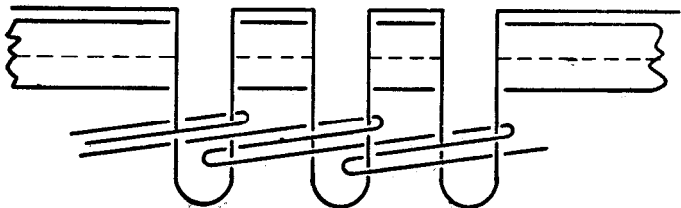
Speck and Leaf — See under 'Fibre Characteristics'.

Spyndle — A unit of length used in the determination of count or grist of jute yarn; it is equal to 14 400 yd (or 13 167 m).

Sticks — See under 'Fibre Characteristics'.

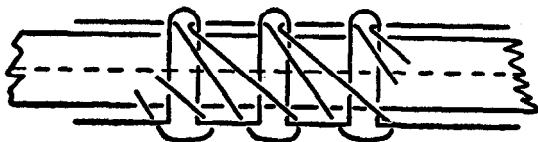
Stitches — The following four types of stitches are commonly used in jute bags:

- 1) **Chain (Union or Anteus) Stitch** — It has sufficient extensibility to stand stretching under impact loading. Union machine is used and the stitching rate is high. But if there is a fracture anywhere in the stitching twine, it tends to pull out more easily in this stitch compared with other types of stitches. Chain stitch is also used as a safety stitch which is a second line of stitching close to another stitch at the seam.



CHAIN STITCH

- 2) *Herakles Stitch* — It is a more complex form of stitch than the other types and the stitching rate is fairly high.



HERAKLES STITCH

- 3) *Lock Stitch* — It is very strong and does not pull out easily if the twine is broken somewhere. But the stitch is not as elastic as the chain stitch and the production rate is low. Jute lock stitch is often applied as a safety stitch which is a second line of stitching close to another stitch at the seam.



LOCK STITCH

- 4) *Overhead Stitch* — It is most commonly used for heavy duty sacks. Correct lengths of twines are doubled and allowed to pass through the fabric and then round the edge of the fabric. The seam obtained is very strong but the production rate is rather low.



OVERHEAD STITCH

- 5) *Sydney Woolpack* — A double-warp hemmed twill sacking pack with loose top, measuring $137 \times 69 \times 69$ cm (normally with 102 ends/dm and 35 picks/dm) weighing approximately 521 g including top without stripes.

T

Tape — See 'NEWAR'.

Tarpaulin — A made-up article, such as wagon cover, usually made of tarpauling or other heavy cloth.

Tarpauling — Double warp jute tarpaulin cloth in plain weave cloth made wholly of jute with double warp and single weft, interwoven weighing not more than 610 g per square metre (18 ounces per sq yard) having the number of warp threads not more than 118 per dm (30 per inch) and weft threads not more than 55 per dm (14 per inch).

Tar Sewn — Sewing done with bitumenized yarn or twine.

Tensile Strength (Fibre) — *See* under 'Fibre Characteristics'.

Tex — The primary unit in a system of a units expressing the universal count of yarn; the weight in grams of one kilometre of yarn.

NOTE — This system is also intended to be used for expressing the weight per unit length of fibres and other textile products like ropes, rovings, etc. The following multiple and submultiple units may be used to avoid large numbers and small fractions respectively:

$$\begin{aligned} 1 \text{ ktex (kilotex)} &= 1\,000 \text{ tex} \\ 1 \text{ mtex (millitex)} &= 0.001 \text{ tex} \end{aligned}$$

Top — Indicates a quality of raw jute (*see* Grading of Jute).

Truss — A bundle or small bale, suitably covered or wrapped but neither hooped nor machine-pressed.

Tubular Bag — Bags fabricated from continuous tubular cloth.

Twill — The weave that produces diagonal patterns on the surface of the cloth. In the jute industry, generally 2×1 simple twill weave is used.

Twill Ore Pocket — A selvaged twill bag measuring about 76×51 cm (normally with 102 ends/dm and 31 picks/dm), and weighing approximately 794 g used for packing mineral ores.

Twill Weave — A weave that produces diagonal lines on the surface of the cloth.

Twine — *See* 'Jute Twine'.

U

Underfelt — *See* 'Scrim'.

Union Canvas (Jute/Cotton) — Closely woven plain weave fabric made with cotton warp and fine jute weft.

V

Valved Bag — A jute bag with a valve to suit patent filling equipment (*see* Bates Valve).

W

Warp — Threads of the fabric which run parallel to the selvedge.

Webbing — See 'NEWAR'.

Weft — The filling threads which are at right angles to the selvages.

Woollenized Jute — The fibre when subjected to mercerizing treatment under controlled conditions becomes scrumpy like wool; soft and fluffy. The treated jute with or without further chemical softening treatment is called woollenized jute.

Woolpack — See 'New Jute Woolpack', 'Australian Woolpack' and 'New Zealand Woolpack'.

X

X-Bottom — Indicates a quality of raw jute (see Grading of Jute).

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>	<i>Definition</i>
Force	newton	N	$1 \text{ N} = 1 \text{ kg.m/s}^2$
Energy	joule	J	$1 \text{ J} = 1 \text{ N.m}$
Power	watt	W	$1 \text{ W} = 1 \text{ J/s}$
Flux	weber	Wb	$1 \text{ Wb} = 1 \text{ V.s}$
Flux density	tesla	T	$1 \text{ T} = 1 \text{ Wb/m}^2$
Frequency	hertz	Hz	$1 \text{ Hz} = 1 \text{ c/s(s}^{-1}\text{)}$
Electric conductance	siemens	S	$1 \text{ S} = 1 \text{ A/V}$
Electromotive force	volt	V	$1 \text{ V} = 1 \text{ W/A}$
Pressure, stress	pascal	Pa	$1 \text{ Pa} = 1 \text{ N/m}^2$



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